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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,844	07/24/2001	Maximilian A. Biberger	SSI-00501	5915

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HAVERSTOCK & OWENS LLP
162 NORTH WOLFE ROAD
SUNNYVALE, CA 94086

EXAMINER

KACKAR, RAM N

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 03/13/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

2

Office Action Summary

Application No.

09/912,844

Applicant(s)

BIBERGER ET AL.

Examiner

Ram N Kackar

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9 and 10. 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 4-7, 9 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi (US 5314574).

Takahashi discloses a high pressure chamber (Col 1 line 22) for processing semiconductor substrates comprising a first sealing surface (Fig 1-7), a platen for holding semiconductor substrates and a second sealing surface (Fig 1-19), grooves and O-ring seal (Fig 1-21) and a mechanical drive mechanism (Fig 1-24) being a piston driven by a compressible fluid (Col 4 line 50-52) to close and seal the surface to a spacer (Fig 1-20) to form a processing chamber around the substrate.

2. Claims 1, 4-5, 7- 9 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujikawa et al (US 5979306).

Fujikawa et al disclose a high pressure chamber for processing semiconductor substrates comprising a first sealing surface (Fig 2 –5 upper sealing surface), a platen for holding semiconductor substrates and a second sealing surface (Fig 2-5 lower sealing surface), grooves and O-ring seal (Fig 2-9) and a mechanical drive mechanism (Fig 1-24) being a piston driven by a compressible fluid (Fig 6-103) and a non compressible fluid (Fig 6-102 and Col 1-line 64-67

Art Unit: 1763

and Col 2 – line 46-53) and to close and seal the surface to form a processing chamber around the substrate.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US 5314574) in view of Fujikawa et al (5798126).

Takahashi discloses seal on the spacer but not on the first surface (on the chamber housing).

Fujikawa et al teach a high-pressure chamber with several ways of sealing and disclose (Fig 7) two surfaces sealing to each other through spacer (27) having o-ring grooves and seals in both the surfaces.

Therefore it would have been obvious for one with ordinary skill in the art at the time invention was made to have a groove and seal in first surface so as to keep the seal clean.

5. Claims 8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US 5314574) in view of Fujikawa et al (5898727).

Takahashi discloses an air (compressible) cylinder but does not disclose the possibility of hydraulic (incompressible) cylinder or motorized actuator.

Art Unit: 1763

Fujikawa et al disclose other driving means for a linear actuator, like hydraulic and motorized (Col 6 line 45-56). It is well known that a motorized actuator uses a screw for changing rotary motion to a linear one.

Therefore it would have been obvious for one with ordinary skill in the art at the time invention was made to use hydraulic or motorized actuator with a screw so as to have fast opening and closing operation without jitters.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US 5314574) in view of Farmer et al (6067728).

Takahashi does not disclose a clamp to keep the two parts of the high-pressure chamber sealed together during processing.

Farmer et al disclose clamps on both sides of high-pressure chamber (Fig 30- 520 and 550 and Col 6 line 31-34).

Therefore it would have been obvious for one with ordinary skill in the art at the time invention was made to use a clamp to hold the two parts hermetically sealed during processing at high pressure.

7. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US 5314574) in view of Fujikawa et al (6077053).

Takahashi discloses a pressure chamber frame (Fig 1 25, 17 and 24 combined), an air cylinder (24) having a piston coupled to the pressure chamber frame, a sealing plate (23) and a platen coupled to the piston neck.

Art Unit: 1763

Takahashi does not expressly disclose the inside of the fluid cylinder to show first fluid cavity defined by the piston body attached to the frame and the piston and the second fluid cavity defined by the piston neck and pressure chamber frame.

It is inherent and obvious to have two fluid cavities in a fluid cylinder, one on the side of the neck and the other on the other side of the piston to be used to move the piston one way or the other using differential pressure. As an example, Fujikawa discloses this in a gas compressor using pistons (Fig 2 – region H being second cavity and behind R5 being first cavity).

Regarding claims 16 and 17 as Takahashi discloses that the apparatus could be used both at high pressure or normal pressure (Col 1 line 22) it would be obvious to be able to use this chamber for either super critical processing or non-super critical processing.

Response to Amendment

8. Applicant's arguments filed 2/20/2003 have been fully considered but they are not persuasive.

Regarding rejection of claim 1, 4-7, 9 and 14 under 35 U.S.C. 102(b) as being anticipated by Takahashi (US 5314574) applicant has argued that Claims 1 and 14 do not contain each element taught in Takahashi and goes on to explain the advantages of single drive mechanism of the claim compared to the two air cylinders disclosed by Takahashi. Applicant did not state if any elements in the claim were not disclosed by Takahashi.

Applicant has repeated the same argument in regard to the rejection of the same claims using Fujikawa et al (5798126).

Because, Takahashi and Fujikawa disclose all the limitations of these claims, the rejections are proper. The fact that Takahashi and Fujikawa disclose more than the minimum needed, does not make the rejections incorrect.

Regarding rejection of dependent claims 2, 3, 8 and 10-13, applicant has not provided any arguments specifically directed to the rejection of these claims, the rejection are considered valid.

Regarding rejection of claim 15, Fujikawa is not combined with Takahashi to modify or supplement a missing element in Takahashi. In fact, Takahashi discloses all the elements of claim 15 and could have been used to reject this claim under 102(b) also. Fujikawa is only used as a teaching reference to show the fluid cavities inherently present in an air cylinder.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Art Unit: 1763

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N Kackar whose telephone number is 703 305 3996. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703 308 1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9310 for regular communications and 703 872 9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0661.

RK
March 11, 2003


BENJAMIN L. UTECH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700